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Pulpwood Production in the North-Central Region by County, 1982

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HIGHLIGHTS

Lake States

Pulpwood production dropped slightly to 5.52 million cords in 1982. Harvesting of softwood roundwood rose above the record set in 1980. Red pine cutting reached a record high for the fifth straight year. Eight percent of total production was whole-tree chips; aspen was the preferred species. A decline in pulpwood production in the Lake States for pulpmills was nearly offset by the increased pulpwood output for flakeboard plants.

Total production rose 8 percent in Minnesota but fell 5 percent in Michigan and 4 percent in Wisconsin. Minnesota loggers cut a record volume of aspen. For the first time, Wisconsin loggers cut more than 200,000 cords of red pine.

Softwood residue imports from Canada fell to less than half the amount imported in 1980. Softwood residue imports from other areas of the U.S. continued to decline.

Central States

Central States pulpwood production fell 17 percent to 356,000 cords. Seventy percent was residue from wood-using mills. Indiana maintained production at the 1981 level, while output plunged sharply in Illinois, Iowa, and Missouri. Exports rose to 71 percent of total production, breaking all previous records (in volume and percent).

Pulpwood receipts were 106,000 cords, the lowest since 1957. Only 2,000 cords were imported. Most of the decline in receipts was due to mills closing in 1981—three in Illinois and one in Iowa.

Since 1979, nine mills have closed; most of the closures are expected to be permanent. Most of these idled mills supplied products chiefly to the housing industry.

Mills outside the Central States are likely to remain the major customers for Central States pulpwood.

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PULPWOOD PRODUCTION IN THE NORTH-CENTRAL REGION BY COUNTY, 1982

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This is the 24th annual report of the pulpwood harvest in Lake States counties and the 23rd annual report of the harvest in the Central States. Pulpwood constitutes more than half the industrial timber products harvested annually in the Lake States (Michigan, Minnesota, and Wisconsin) and is an important product in the Central States (Illinois, Indiana, Iowa, and Missouri).

Current detailed pulpwood production[1] information is necessary for intelligent planning and decisionmaking in procuring wood, managing forest resources, and developing forest industries. Also, researchers need current pulpwood information to plan projects.

Since 1979, we have included logs, bolts, and wood residue used in manufacturing particleboard, waferboard, and oriented strand board in this annual series. Together, these boards are called flakeboards. Wood used at flakeboard plants is identical or nearly identical to wood used at pulpmills.

Because flakeboard plants primarily use aspen and wood residue, including them does not distort roundwood use trends for other species nor preclude comparing survey results with 1978 and previous years.

Pulpmills and flakeboard plants using North Central States timber in 1982 reported their pulpwood receipts[2] by species groups and counties of origin. This report presents the results of the survey, analyzes the data where appropriate, compares results with 1981 or earlier years, and discusses trends in pulpwood production and use.

The Lake States and Central States are discussed separately because the timber types in each area are different and less information can be released about the Central States (more detailed data on pulpwood production and receipts in the Central States would reveal the operations of individual mills).

Pulpwood production in Minnesota is completely and accurately shown. However, to prevent disclosure of confidential information about softwood pulpwood use by individual companies, the total quantity of softwood pulpwood imports and exports between Minnesota and Canada are not reported. **Thus, some Minnesota softwood shipped to Canada is shown as remaining and used in Minnesota, and receipts of Canadian softwood in Minnesota are understated.**

LAKE STATES

Production

Pulpwood production fell 1 percent from 1981 to 5.52 million cords[3] in 1982 (table 1). Ninety-two out of 100 cords were roundwood (including chips from roundwood); the remainder was residue from wood-using plants.[4]

Principal species cut were aspen (2,382,000 cords), jack pine (536,000 cords), red pine (345,000 cords), and balsam fir (314,000 cords). Other notable species, each providing more than 180,000 cords were spruce, white birch, and hard maple.

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[1] *Pulpwood production, determined from mill receipts, is the annual volume of pulpwood cut in a specific county or region, plus the annual wood residue volume produced by sawmills, veneer mills, etc., in a specific State or region that was used to manufacture pulp, particleboard, waferboard, and oriented strand board.*

[2] *Pulpwood receipts are the volume of wood received by mills in a specific State or region, regardless of the geographic source.*

[3] *All references to cords are in standard cords. A standard cord contains 128 cubic feet including wood, bark, and air space.*

[4] *Residue is the byproduct from sawmills, veneer mills, cooperage mills, and other wood-using plants that is used for pulping and flakeboard. Residue includes slabs, edgings, veneer cores, sawdust, wood flour and chips manufactured from slabs, edgings, and veneer cores.*

Table 1.--Production and imports of pulpwood, Lake States, 1982

(In standard cords, unpeeled)

Species and destination	Production by States [1]				Imports			
	Michigan	Minnesota	Wisconsin	Regional total	Other U.S. [2]	Canada	Total imports	Total receipts
Roundwood								
Cedar								
Michigan	11,704	--	--	11,704	--	--	--	11,704
Total	11,704	--	--	11,704	--	--	--	11,704
Balsam fir								
Michigan	68,527	--	787	69,314	--	--	--	69,314
Minnesota	--	93,213	166	93,379	--	--	--	93,379
Wisconsin	27,193	1,540	102,148	130,881	--	--	--	130,881
Exported [3]	9,062	11,068	--	20,130	--	--	--	--
Total	104,782	105,821	103,101	313,704	--	--	--	293,574
Hemlock								
Michigan	51,701	--	662	52,363	--	--	--	52,363
Wisconsin	3,858	--	32,715	36,573	--	--	--	36,573
Total	55,559	--	33,377	88,936	--	--	--	88,936
Jack pine								
Michigan	111,506	--	615	112,121	--	--	--	112,121
Minnesota	--	113,592	3,733	117,325	--	--	--	117,325
Wisconsin	33,554	15,343	248,359	297,256	8,910 [4]	418	9,328 [4]	306,584 [5]
Exported [3]	82	9,057	--	9,139	--	--	--	--
Total	145,142	137,992	252,707	535,841	8,910 [4]	418	9,328 [4]	536,030 [5]
Red pine								
Michigan	83,383	--	2,243	85,626	--	--	--	85,626
Minnesota	--	20,111	2,375	22,486	--	--	--	22,486
Wisconsin	14,707	7,237	215,398	237,342	--	--	--	237,342
Total	98,090	27,348	220,016	345,454	--	--	--	345,454
White pine								
Michigan	17,881	--	224	18,105	--	--	--	18,105
Minnesota	--	13,484	681	14,165	--	--	--	14,165
Wisconsin	1,209	100	19,941	21,250	--	--	--	21,250
Total	19,090	13,584	20,846	53,520	--	--	--	53,520
Spruce								
Michigan	43,663	--	85	43,748	--	--	--	43,748
Minnesota	--	100,136	10	100,146	--	3,229	3,229	103,375
Wisconsin	18,891	26,006	28,216	73,113	--	5,471	5,471	78,584
Exported [3]	5,804	7,101	--	12,905	--	--	--	--
Total	68,358	133,243	28,311	229,912	--	8,700	8,700	225,707
Tamarack								
Michigan	6,941	--	--	6,941	--	--	--	6,941
Minnesota	--	17,434	--	17,434	--	--	--	17,434
Wisconsin	2,867	27,150	7,075	37,092	--	--	--	37,092
Total	9,808	44,584	7,075	61,467	--	--	--	61,467
Ash								
Michigan	9,706	--	--	9,706	--	--	--	9,706
Wisconsin	4,734	3,334	34,424	42,492	--	--	--	42,492
Total	14,440	3,334	34,424	52,198	--	--	--	52,198
Aspen								
Michigan	492,916	--	158	493,074	--	--	--	493,074
Minnesota	--	766,362	18,141	784,503	--	--	--	784,503
Wisconsin	139,381	86,938	865,921	1,092,240	--	--	--	1,092,240
Exported [3]	--	12,646	--	12,646	--	--	--	--
Total	632,297	865,946	884,220	2,382,463	--	--	--	2,369,817
Balsam poplar								
Michigan	32,022	--	--	32,022	--	--	--	32,022
Minnesota	--	54,961	1,214	56,175	--	--	--	56,175
Total	32,022	54,961	1,214	88,197	--	--	--	88,197
Basswood								
Michigan	16,395	--	22	16,417	--	--	--	16,417
Minnesota	--	147	--	147	--	--	--	147
Wisconsin	544	--	11,408	11,952	--	--	--	11,952
Total	16,939	147	11,430	28,516	--	--	--	28,516
Beech								
Michigan	13,657	--	--	13,657	--	--	--	13,657
Wisconsin	758	--	6	764	--	--	--	764
Total	14,415	--	6	14,421	--	--	--	14,421
White birch								
Michigan	55,956	--	117	56,073	--	--	--	56,073
Minnesota	--	177	--	177	--	--	--	177
Wisconsin	7,538	3,227	130,810	141,575	--	--	--	141,575
Total	63,494	3,404	130,927	197,825	--	--	--	197,825
Yellow birch								
Michigan	17,533	--	--	17,533	--	--	--	17,533
Wisconsin	8,022	--	23,071	31,093	--	--	--	31,093
Total	25,555	--	23,071	48,626	--	--	--	48,626
Cottonwood								
Michigan	391	--	--	391	--	--	--	391
Total	391	--	--	391	--	--	--	391
Elm								
Michigan	14,448	--	20	14,468	--	--	--	14,468
Wisconsin	41,810	91	53,308	95,209	--	--	--	95,209
Total	56,258	91	53,328	109,677	--	--	--	109,677

(Table 1 continued on next page)

(Table 1 continued)

Species and destination	Production by States 1/				Imports			Total receipts
	Michigan	Minnesota	Wisconsin	Regional total	Other U.S. 2/	Canada	Total imports	
Roundwood (cont.)								
Hickory								
Michigan	352	--	--	352	--	--	--	352
Wisconsin	--	--	483	483	--	--	--	483
Total	352	--	483	835	--	--	--	835
Hard maple								
Michigan	44,526	--	18	44,544	--	--	--	44,544
Wisconsin	27,587	621	111,631	139,839	--	--	--	139,839
Total	72,113	621	111,649	184,383	--	--	--	184,383
Soft maple								
Michigan	86,533	--	80	86,613	--	--	--	86,613
Wisconsin	11,341	27	62,366	73,734	--	--	--	73,734
Total	97,874	27	62,446	160,347	--	--	--	160,347
Red oak								
Michigan	63,533	--	11	63,544	--	--	--	63,544
Wisconsin	2,009	87	48,689	50,785	--	--	--	50,785
Total	65,542	87	48,700	114,329	--	--	--	114,329
White oak								
Michigan	20,387	--	--	20,387	--	--	--	20,387
Wisconsin	252	49	12,477	12,778	--	--	--	12,778
Total	20,639	49	12,477	33,165	--	--	--	33,165
Other hardwoods								
Michigan	2,879	--	8	2,887	--	--	--	2,887
Wisconsin	2,493	--	3,281	5,774	--	--	--	5,774
Total	5,372	--	3,289	8,661	--	--	--	8,661
Total roundwood								
Michigan	1,266,540	--	5,050	1,271,590	--	--	--	1,271,590
Minnesota	--	1,179,617	26,320	1,205,937	--	3,229	3,229	1,209,166
Wisconsin	348,748	171,750	2,011,727	2,532,225	8,910	5,889	14,799	2,547,024
Exported 3/	14,948	39,872	--	54,820	--	--	--	--
Total	1,630,236	1,391,239	2,043,097	5,064,572	8,910	9,118	18,028	5,027,780
Residue, softwood								
Michigan	7,832	--	234	8,066	--	2,580	2,580	10,646
Minnesota	--	44,534	--	44,534	--	755	755	45,289
Wisconsin	5,602	4,261	41,646	51,509	121,987	35,703	157,690	209,199
Exported 3/	--	690	--	690	--	--	--	--
Total	13,434	49,485	41,880	104,799	121,987	39,038	161,025	265,134
Residue, hardwood								
Michigan	66,217	--	22,868	89,085	16,140	--	16,140	105,225
Minnesota	--	40,297	--	40,297	--	4,183	4,183	44,480
Wisconsin	41,292	2,897	177,693	221,882	--	80	80	221,962
Exported 3/	--	384	--	384	--	--	--	--
Total	107,509	43,578	200,561	351,648	16,140	4,263	20,403	371,667
All wood material								
Michigan	1,340,589	--	28,152	1,368,741	16,140	2,580	18,720	1,387,461
Minnesota	--	1,264,448	26,320	1,290,768	--	8,167	8,167	1,298,935
Wisconsin	395,642	178,908	2,231,066	2,805,616	130,897	41,672	172,569	2,978,185
Exported 3/	14,948	40,946	--	55,894	--	--	--	--
Total	1,751,179	1,484,302	2,285,538	5,521,019	147,037	52,419	199,456	5,664,581

1/ Vertical columns of figures under box heading "Production by States" present the amount of pulpwood cut in each State.

2/ Mostly western States.

3/ Pulpwood shipped to mills outside of region.

4/ Ponderosa pine

5/ Includes ponderosa pine from other U.S.

Pulpwood production from softwoods climbed to a new high. Pulpwood output from softwood roundwood surpassed the peak set in 1980, and pulpwood output from softwood mill residue was second only to 1979. Harvesting of each softwood species group rose from 1981; the largest volume increase was in jack pine (70,000 cords). Red pine harvesting rose 61,000 cords to a record for the fifth straight year. White pine production inched up to a record for the third consecutive year.

Hardwood pulpwood production from Lake States mill residue fell 105,000 cords and production from hardwood roundwood fell 185,000 cords. By species, significant declines were in soft maple (42,000 cords), red oak (36,000 cords), aspen (36,000 cords), and hard maple (34,000 cords).

Lake States loggers produced 459,600 cords of whole-tree chips[5] (up 5 percent from 1981), which accounted for 8 percent of the pulpwood from all sources in 1982. More than one-fifth of the pulpwood produced in Michigan was whole-tree chips. Wisconsin produced nominal amounts of these chips. Production of whole-tree chips by species group and State was:

State	Softwoods	Aspen	Other hardwoods
	(Thousand cords)		
Michigan	15.1	225.0	138.5
Minnesota	—	68.1	2.9
Wisconsin	—	10.0	—

[5] *Pulpwood produced from chipping entire trees (all portions of trees above ground, except the stumps).*

Michigan—Michigan supplied 1.75 million cords of pulpwood, off 5 percent from 1981. Pulpwood demand was dampened by a strike at a Michigan mill during part of 1982. Production declines were largest in soft maple and hardwood mill residue used for pulp. Marquette, Iron, Menominee, and Delta Counties each produced more than 100,000 cords.

Minnesota—Minnesota production climbed 8 percent to 1.48 million cords. Gains were concentrated in aspen, jack pine, and tamarack. The aspen cut surpassed the previous record in 1979 by 28,000 cords and was 93 percent of the hardwood harvest. Top-producing counties that supplied 70 percent of the roundwood were St. Louis, Itasca, Koochiching, Beltrami, and Cass.

Wisconsin—Lower demand for Wisconsin aspen and hardwood mill residue were the key factors in the drop in total pulpwood output to 2.29 million cords. Most of the harvest decline was in the Northwestern Unit (fig. 1). Wisconsin loggers cut more than 200,000 cords of red pine for the first time, extending the consecutive record-setting red pine harvests to 5 years. Jack pine production eclipsed the record cut in 1978. Marinette, Bayfield, Oneida, Forest, Vilas, and Price Counties were the leading producers.

In this report we show the distribution of the harvest in two ways: first, the amount of pulpwood cut relative to the growing stock volume in major pulpwood species (fig. 1); and second, the amount of pulpwood cut relative to commercial forest area (fig. 2). Harvesting pressure slackened chiefly in the Northern Lower Peninsula of Michigan and to a moderate extent in the Northwestern and Central Units of Wisconsin. Other major pulpwood-producing areas had moderate harvest gains to slight declines from 1981. Pulpwood cutting is in a significant uptrend in Michigan's Southern Lower Peninsula although this Unit furnished only 4 percent of Michigan's roundwood pulpwood in 1982.

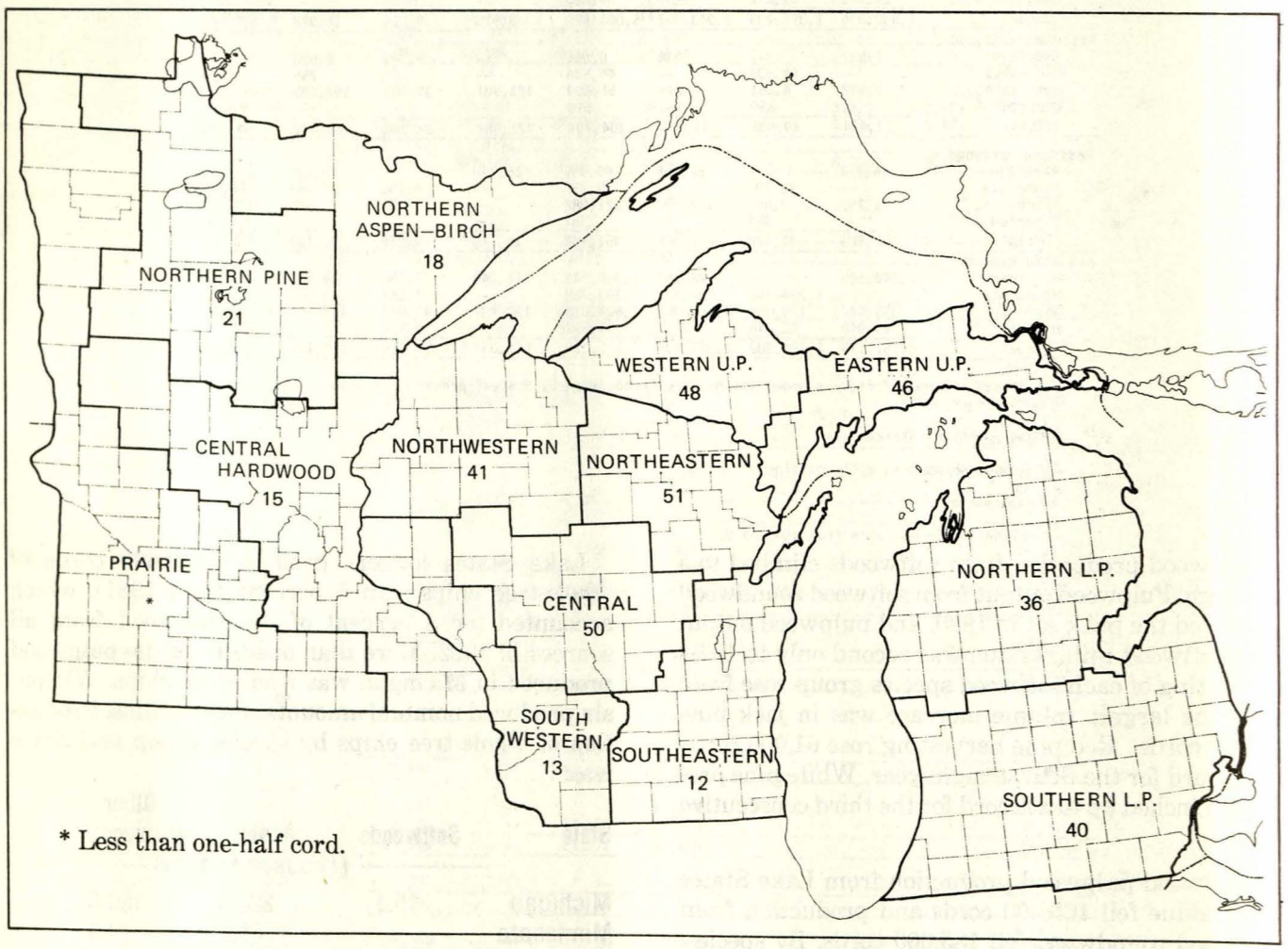


Figure 1.—*Cords of pulpwood (including chips from roundwood) harvested per 1,000 cords of merchantable volume in principal pulpwood species by Forest Survey Unit, 1982. Merchantable volume was determined during the last forest inventory in each State.*

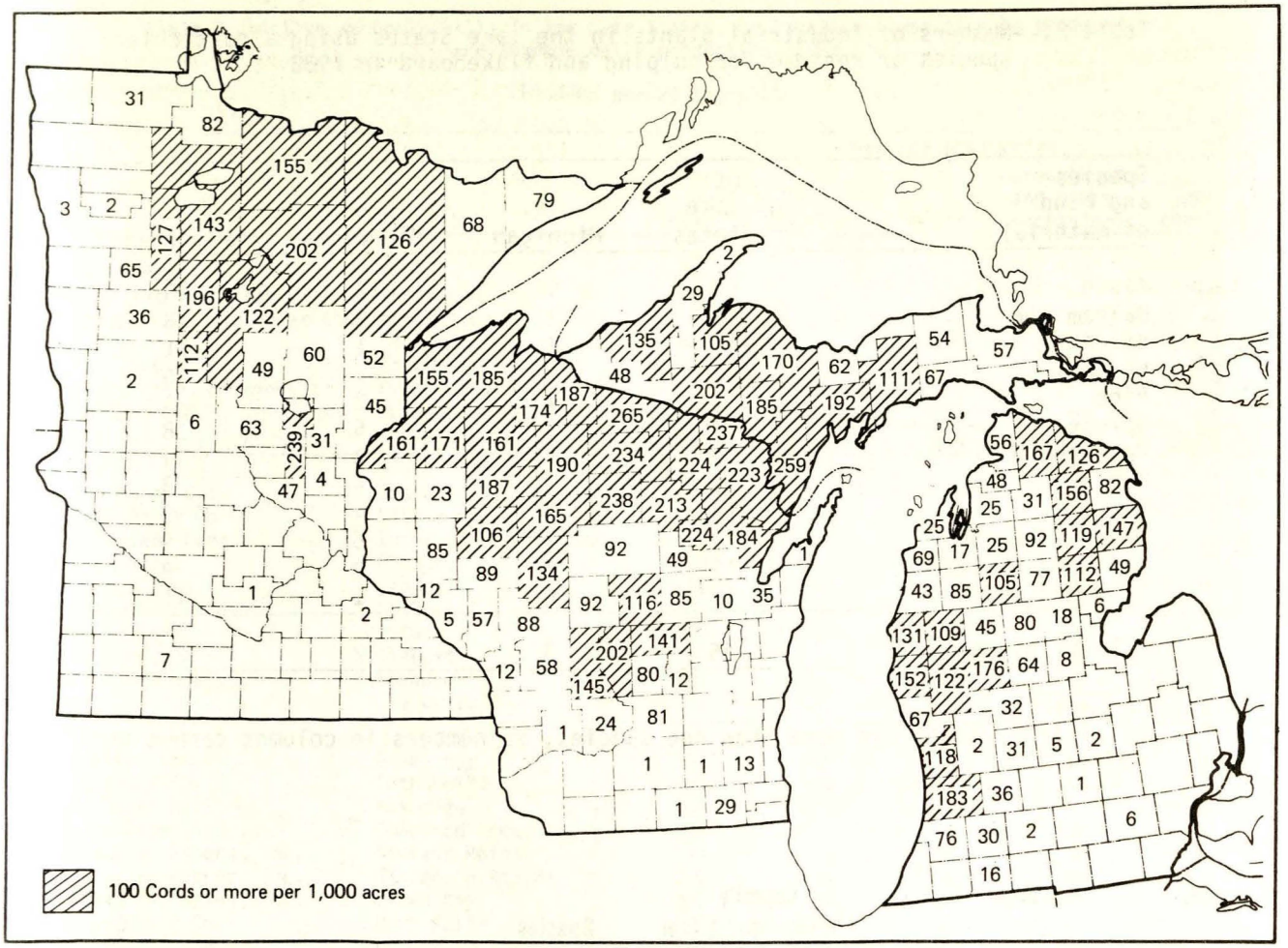


Figure 2.—*Cords of pulpwood cut per 1,000 acres of stocked commercial forest land in principal pulpwood-producing counties, 1982. Acres of stocked commercial forest land were determined during the last inventory in each State.*

Receipts

Thirty-eight pulp, 3 particleboard, 3 waferboard, and 2 oriented strand board mills received 5.66 million cords of pulpwood in 1982. Forty-one of the 46 operating mills used aspen and 19 used birch (table 2).

Softwood residue imports from Canada continued to fall and were less than half the level in 1980. Softwood residue received in the Lake States from other areas of the U.S. plunged for the third straight year to near the 1967 level; major suppliers were South Dakota and Wyoming.

Michigan—Only 3 percent of the 1.39 million cords received were from out-of-State. Hardwood mill residue was the primary import. Aspen, jack pine, soft maple, and red pine were the species most in demand.

Wisconsin—Twenty-five Wisconsin mills received 2.98 million cords including 396,000 cords from Michigan, 179,000 cords from Minnesota, 131,000 cords from other (primarily western) States, and 42,000 cords from Canada. Out-of-State sources provided nearly two-thirds of the spruce and four-fifths of the tamarack requirements. Canada and States outside the Lake States area supplied three-fourths of the softwood residue used by Wisconsin mills.

Industry Trends and Analysis

Average daily pulp production was 10,770 tons per day (table 3). Wisconsin's average daily pulp production almost equaled similar production in Michigan and Minnesota combined.

Michigan's first oriented strand board (OSB) plant began operations in 1982. Annual production capacity of the Lake States flakeboard plants was 780 million square feet as shown on the next page:

Table 2.--Numbers of industrial plants in the Lake States using a particular species or residue for pulping and flakeboard in 1982

Species and kind of material	Total Lake States	Michigan	Minnesota	Wisconsin
Aspen	41	9	12	20
Balsam fir	16	3	5	8
Birch	19	7	1	11
Hemlock	8	2	-	6
Pine	10	4	2	4
Spruce	15	2	5	8
Tamarack	8	1	3	4
Maple	15	7	-	8
Oak	16	7	-	9
Other hardwoods	21	7	5	9
Softwood residue	12	2	2	8
Hardwood residue	18	6	1	11
Total plants[1/]	46	9	12	25

[1/] Some plants use more than one species, so numbers in columns cannot be added.

Company	Location	Capacity (Million square feet (¾-inch basis))
Champion International Corp.	Gaylord, MI	175
Weyerhaeuser Co.	Grayling, MI	105
Blandin Wood Products Co.	Grand Rapids, MN	135
Northwood Panelboard Co.	Bemidji, MN	80
Potlatch Corp.	Bemidji, MN	75
Louisiana - Pacific Corp.	Hayward, WI	130
Rodman Industries	Marinette, WI	15
Weyerhaeuser Co.	Marshfield, WI	65
		780

On a regional basis, Lake States mills are the dominant producers of waferboard and OSB in the U.S. Canada remains the leading producer of waferboard worldwide. These structural board plants are highly dependent on the housing industry for their markets.

Lake States pulpwood production for flakeboard plants in 1981 and 1982 was:

Species	Production 1981	1982
	(Thousand cords)	
Roundwood		
Aspen	382	554
Other species	54	48
Residue	60	73
Total	496	675

Housing starts in the U.S. fell in 1982 to 1,060,000 units, the lowest annual total since 1946. Despite this adverse housing market, Lake States pulpwood production for flakeboard rose 36 percent in 1982 because several plants had started or expanded operations since 1980 and were competing with the softwood plywood industry in the construction and remodeling markets.

Lake States pulpwood production for pulpmills fell 5.0 percent from 1981 to 4.85 million cords. This decline is only slightly greater than the 4.3 percent drop in paper and paperboard production in the U.S. in 1982. In the Lake States, the decline in pulpwood production for pulpmills was nearly offset by the increased pulpwood output for flakeboard plants.

Because demand for paper and new housing is higher in 1983, pulpwood production in the Lake States is likely to be up substantially from 1982.

Table 3.--Active woodpulp mills in the Lake States, by location, type of pulp produced, and average daily production, 1982

(In tons per 24 hours)[1/]

Company	Location	Average production				
		Total	Sulfite	Kraft	Groundwood and other mechanical	Semi-chemical
Michigan						
Abitibi-Price, Inc.	Alpena	430	--	--	430	--
Champion International	Ontonagon	440	--	--	--	440
Manistique Pulp and Paper Co.	Manistique	90	--	--	90	--
Mead Corp.	Escanaba	800	--	600	200	--
Menasha Corp.	Otsego	225	--	--	--	225
Packaging Corp. of America	Filer City	600	--	--	--	600
Warren Co., S.D.	Muskegon	250	--	250	--	--
Total	7 Mills	2,835	--	850	720	1,265
Minnesota						
Blandin Paper Co.	Grand Rapids	300	--	--	300	--
Hennepin Paper Co.	Little Falls	75	--	--	75	--
Boise Cascade Corp.	International Falls	920	--	380	540	--
Potlatch Corp.	Cloquet	475	--	475	--	--
Superwood Corp.	Bemidji	100	--	--	100	--
St. Regis Paper Co.	Sartell	385	--	--	385	--
Superwood Corp.	Duluth	350	--	--	350	--
Conwed Corp.	Cloquet	50	--	--	50	--
Certain-Teed Corp.	Shakopee	80	--	--	80	--
Total	9 Mills	2,735	--	855	1,880	--
Wisconsin						
James River Corp.	Green Bay	150	150	--	--	--
Weyerhaeuser Co.	Rothschild	200	200	--	--	--
Badger Paper Mills	Peshtigo	100	100	--	--	--
Appleton Papers Inc.	Combined Locks	200	--	--	200	--
Consolidated Papers, Inc.	Stevens Point	230	--	--	230	--
Consolidated Papers, Inc.	Wisconsin Rapids	750	--	450	300	--
Green Bay Packaging, Inc.	Green Bay	200	--	--	--	200
Flambeau Paper Co.	Park Falls	110	110	--	--	--
Midtec Paper Corp.	Kimberly	180	--	--	180	--
Pentair, Inc.	Niagara	210	--	--	210	--
Mosinee Paper Mills Co.	Mosinee	210	--	210	--	--
Nekoosa Papers, Inc.	Nekoosa	335	--	335	--	--
Nekoosa Papers, Inc.	Port Edwards	235	235	--	--	--
Owens-Illinois	Tomahawk	1,000	--	--	--	1,000
Procter and Gamble, Inc.	Green Bay	2/	2/	2/	2/	2/
Rhinelander Paper Co.	Rhinelander	75	75	--	--	--
Genstar Corp.	Cornell	100	--	--	100	--
Superior Fiber Products Co.	Superior	180	--	--	180	--
Thilmany Pulp and Paper Co.	Kaukauna	400	--	400	--	--
Tomahawk Pulp Co., Inc.	Tomahawk	50	--	--	50	--
Wausau Paper Mills Co.	Brokaw	185	185	--	--	--
Superwood Corp.	Phillips	100	--	--	100	--
Total	22 Mills	5,200	1,055	1,395	1,550	1,200
All states	38 Mills	10,770	1,055	3,100	4,150	2,465

[1/] Lockwood's Directory of the Paper and Allied Industries -- 1983.

[2/] Capacity not available.

CENTRAL STATES

Production

Pulpwood production plunged 17 percent to 356,000 cords (table 4). Seven out of 10 cords were residue from wood-using mills. Demand fell for roundwood in each species group and for Central States mill residue. Loggers cut the least soft hardwood pulpwood since these annual production studies were begun in 1955. Exports from the Central States, primarily hardwood residue, topped all previous years in volume and percentage terms. Mills in Kentucky, Michigan, Ohio, and Wisconsin received 71 percent of the pulpwood production.

Indiana, the leading producer, maintained production at the 1981 level. Output fell sharply in Illinois, Iowa, and Missouri. Illinois production fell below

Table 4.--Production and imports of pulpwood, Central States, 1982

(In standard cords, unpeeled)[1/]

Species and destination	Production by States[2/]					Imports			Total receipts
	Illinois	Indiana	Iowa	Missouri	Regional total	Lake States	Other U.S.	Total imports	
Roundwood									
Softwoods									
Exported[3/]	12,536	--	--	1,784	14,320	--	--	--	--
Total	12,536	--	--	1,784	14,320	--	--	--	--
Soft hardwoods									
Central States[4/]	3,462	9,771	2,518	5,693	21,444	--	1,187	1,187	22,631
Exported[3/]	8,400	--	--	1,286	9,686	--	--	--	--
Total	11,862	9,771	2,518	6,979	31,130	--	1,187	1,187	22,631
Hard hardwoods									
Central States[4/]	1,927	9,722	4,347	3,220	19,216	--	1,181	1,181	20,397
Exported[3/]	12,932	18,356	--	11,725	43,013	--	--	--	--
Total	14,859	28,078	4,347	14,945	62,229	--	1,181	1,181	20,397
Total roundwood									
Central States[4/]	5,389	19,493	6,865	8,913	40,660	--	2,368	2,368	43,028
Exported[3/]	33,868	18,356	--	14,795	67,019	--	--	--	--
Total	39,257	37,849	6,865	23,708	107,679	--	2,368	2,368	43,028
Residue, softwood									
Exported[3/]	3,157	--	3,635	2,108	8,900	--	--	--	--
Total	3,157	--	3,635	2,108	8,900	--	--	--	--
Residue, hardwood									
Central States[4/]	14,052	31,655	3,405	13,621	62,733	--	--	--	62,733
Exported[3/]	19,970	115,331	--	41,525	176,826	--	--	--	--
Total	34,022	146,986	3,405	55,146	239,559	--	--	--	62,733
All wood material									
Central States[4/]	19,441	51,148	10,270	22,534	103,393	--	2,368	2,368	105,761
Exported[3/]	56,995	133,687	3,635	58,428	252,745	--	--	--	--
Total	76,436	184,835	13,905	80,962	356,138	--	2,368	2,368	105,761

[1/] Factors used in converting to standard green cords (128 cu. ft. including bark and air space) were:
4,500 pounds of soft hardwood roundwood;
5,000 pounds of hard hardwood or coniferous roundwood;
4,100 pounds of softwood chips (green);
4,400 pounds of hardwood chips (green);
2,500 pounds of chips (all species, dry).

[2/] Vertical columns of figures under box heading--Production by States--present the amount of pulpwood cut in each State.

[3/] Pulpwood shipped to mills outside the region.

[4/] Combined to prevent disclosure of individual mill receipts.

100,000 cords for the first time since 1967. Production has not been as low since 1969 in Missouri and since 1955 in Iowa.

Loggers harvested pulpwood in 20 counties in Illinois, 20 counties in Indiana, 18 counties in Missouri, and 6 counties in Iowa (fig. 3). Logging areas were contracted in northeastern and north-central Illinois, northwestern Indiana, and eastern Iowa.

RECEIPTS

Three Central States pulpmills received 106,000 cords, down 45 percent from receipts at the 7 active mills in 1981, and the lowest since 1957. Every category of roundwood and residue showed lower receipts than in 1981. Three mill closings in Illinois and one in Iowa during 1981 led to the decline in receipts. All of the mills that closed manufactured products for the depressed housing market. Imports were only 2,000 cords.

INDUSTRY TRENDS AND ANALYSIS

Average daily pulp production fell to 470 tons per day (table 5), about one-third of the production in 1974. Depressed housing and related markets have led to 9 mill closures since 1979. Most of the closures are likely to be permanent.

Pulpwood export markets to surrounding States have become dominant and vital to Central States pulpwood producers because pulping capacity has declined in the Central States and increased in nearby States. Growing export markets have cushioned the drop in Central States pulpwood production. Exports

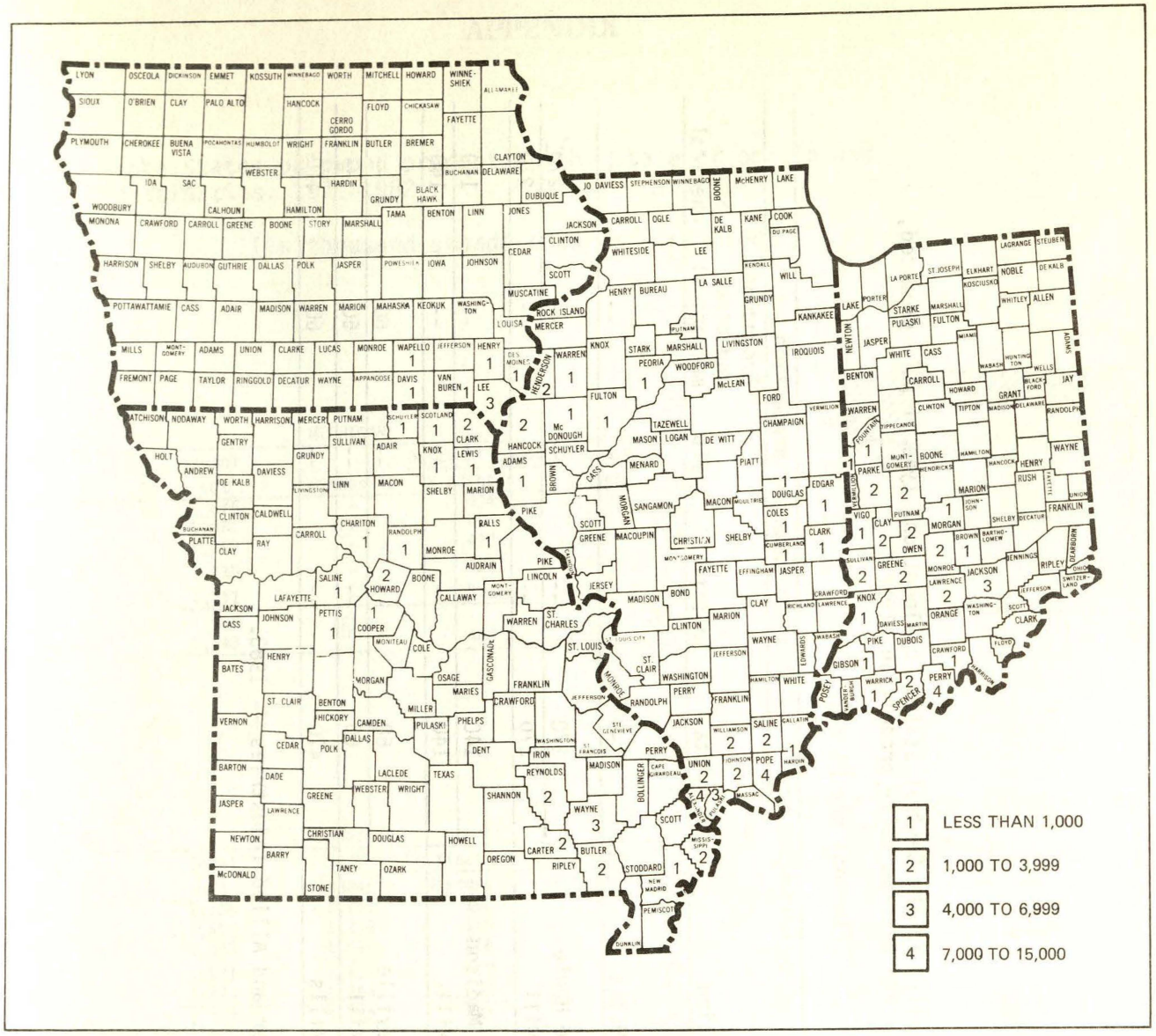


Figure 3.—*Production of pulpwood from roundwood (including chips from roundwood) in the Central States by counties, in standard cords, 1982.*

grew from 3 percent of the total production in 1967 to 71 percent in 1982 and have steadily grown in volume as shown below:

Year	Exports	Total production	Exports
	(Thousand cords)		(Percent)
1967	7	252	3
1972	158	463	34
1977	236	445	53
1982	253	356	71

Although markets for pulpwood within the Central States may improve, mills outside the Central States are likely to remain the major customers for Central States pulpwood.

Table 5.--Active woodpulp mills in the Central States, by location, type of pulp produced, and average daily production, 1982

(In tons per 24 hours)[1/]

Company	Location	Average production				
		Total	Sulfite	Kraft	Groundwood and other mechanical	Semi-chemical
Illinois (no current operations)						
Total	0 Mills	--	--	--	--	--
Indiana						
Weston Paper and Mfg. Co.	Terre Haute	270	--	--	--	270
Total	1 Mill	270	--	--	--	270
Iowa						
Consolidated Packaging Corp.	Fort Madison	140	--	--	--	140
Total	1 Mill	140	--	--	--	140
Missouri						
Huebert Fibreboard, Inc.	Booneville	60	--	--	60	--
Total	1 Mill	60	--	--	60	--
All states	3 Mills	470	--	--	60	410

[1/] Lockwood's Directory of the Paper and Allied Industries -- 1983.

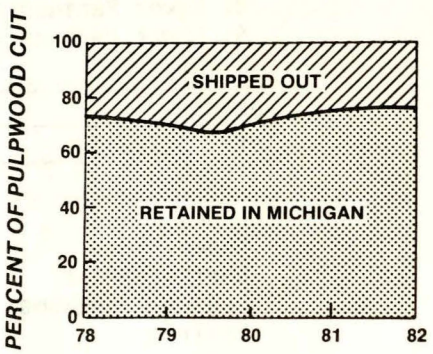
APPENDIX

Table 6.--Lake States pulpwood production[1/] by State of origin and destination, 1978-1982

(In thousand standard cords, unpeeled)

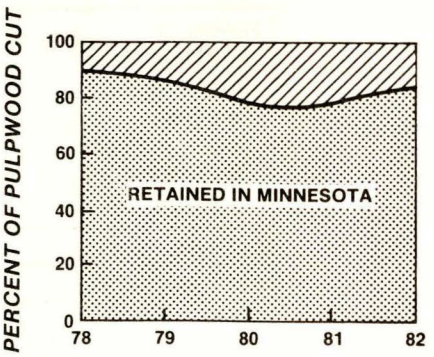
MICHIGAN

	Total cut	Destination of pulpwood			
		Minnesota	Wisconsin	Michigan	Other
1978	1,675	-	404	1,248	23
1979	1,981	(2/)	516	1,428	37
1980	1,969	-	490	1,443	36
1981	1,838	-	419	1,402	17
1982	1,751	-	396	1,340	15
5 year average	1,843	(2/)	445	1,372	26



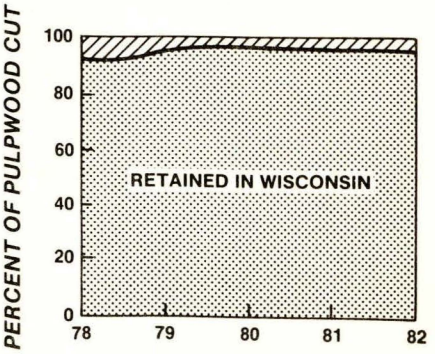
MINNESOTA

	Total cut	Destination of pulpwood			
		Minnesota	Wisconsin	Michigan	Other
1978	1,338	1,155	162	-	21
1979	1,458	1,226	169	-	63
1980	1,333	1,044	216	-	73
1981	1,371	1,119	177	-	75
1982	1,484	1,264	179	-	41
5 year average	1,397	1,162	181	-	54



WISCONSIN

	Total cut	Destination of pulpwood			
		Minnesota	Wisconsin	Michigan	Other
1978	1,895	26	1,779	70	20
1979	2,109	20	2,024	47	18
1980	2,362	18	2,297	35	12
1981	2,389	34	2,320	26	9
1982	2,286	27	2,231	28	-
5 year average	2,208	25	2,130	41	12



[1/] Production in 1978 does not include wood for particleboard or waferboard plants.

[2/] Less than 500 cords.

Table 7.--Lake States pulpwood production by Forest Survey Unit and destination by State, 1982

(In hundred standard cords, unpeeled)

Unit	Total cut	Destination of pulpwood			
		Michigan	Minnesota	Wisconsin	Other
MICHIGAN					
Roundwood					
E. Upper Peninsula	4,256	3,153	--	998	105
W. Upper Peninsula	5,535	3,109	--	2,426	--
N. Lower Peninsula	5,849	5,740	--	64	45
S. Lower Peninsula	664	664	--	--	--
Total	16,304	12,666	--	3,488	150
Residue	1,209	740	--	469	--
Total pulpwood	17,513	13,406	--	3,957	150
MINNESOTA					
Roundwood					
Aspen-Birch	6,182	--	4,992	791	399
Northern Pine	7,080	--	6,189	891	--
Central Hardwood	646	--	614	32	--
Prairie	3	--	--	3	--
Total	13,911	--	11,795	1,717	399
Residue	931	--	848	72	11
Total pulpwood	14,842	--	12,643	1,789	410
WISCONSIN					
Roundwood					
Northeastern	8,750	51	--	8,699	--
Northwestern	8,315	--	263	8,052	--
Central	3,028	--	--	3,028	--
Southwestern	235	--	--	235	--
Southeastern	102	--	--	102	--
Total	20,430	51	263	20,116	--
Residue	2,424	231	--	2,193	--
Total pulpwood	22,854	282	263	22,309	--

Table 8.--Lake States pulpwood production[1/] from roundwood by species, State, and Forest Survey Unit, 1978-1982

(In thousand standard cords, unpeeled)

MICHIGAN

Unit	Aspen					Balsam fir					Birch					Hemlock				
	Annual production					Annual production					Annual production					Annual production				
	1978	1979	1980	1981	1982	1978	1979	1980	1981	1982	1978	1979	1980	1981	1982	1978	1979	1980	1981	1982
Eastern Upper Peninsula	103	125	116	89	93	44	43	57	57	56	28	35	29	36	31	24	26	32	23	30
Western Upper Peninsula	220	204	209	201	210	42	41	46	42	45	46	53	40	44	38	24	19	26	16	26
Northern Lower Peninsula	257	375	374	350	315	1	1	6	5	4	16	21	34	25	19	(2/)	--	(2/)	(2/)	(2/)
Southern Lower Peninsula	6	5	6	12	14	--	--	--	--	--	(2/)	(2/)	(2/)	(2/)	1	--	--	--	--	--
Total	586	709	705	652	632	87	85	109	104	105	90	109	103	105	89	48	45	58	39	56

MINNESOTA

Aspen-Birch	363	392	313	352	308	59	72	73	69	68	2	3	11	9	1	--	--	--	--	--
Northern Pine	306	404	357	422	504	37	46	38	31	38	5	1	4	2	2	--	--	--	--	--
Central Hardwood	35	41	29	27	54	--	(2/)	--	--	(2/)	2	3	(2/)	(2/)	(2/)	--	--	--	--	--
Prairie	--	1	(2/)	(2/)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	704	838	699	801	866	96	118	111	100	106	9	7	15	11	3	--	--	--	--	--

WISCONSIN

Northeastern	331	364	459	415	392	53	60	66	79	70	62	76	91	74	69	30	26	26	24	29
Northwestern	300	319	326	469	420	21	23	35	25	32	53	63	80	73	74	19	13	6	4	4
Central	37	66	85	79	71	1	1	1	1	1	6	11	15	12	11	4	1	2	1	(2/)
Southwestern	1	1	1	1	(2/)	--	--	--	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	--	--	--	--	--
Southeastern	(2/)	1	2	1	1	(2/)	--	--	--	(2/)	(2/)	1	(2/)	(2/)	(2/)	--	--	--	--	--
Total	569	751	873	965	884	75	84	102	105	103	121	151	186	159	154	53	40	34	29	33
Lake States	1,959	2,298	2,277	2,418	2,382	258	287	322	309	314	220	267	304	275	246	101	85	92	68	89

(Table 8 continued on next page)

1/ Production in 1978 does not include wood for particleboard or waferboard plants.
2/ Less than 500 cords.
3/ Includes small quantity of cedar not shown in other parts of table.

(Table 8 continued)

MICHIGAN

Unit	Pine					Spruce					Tamarack					Other hardwoods				
	Annual production					Annual production					Annual production					Annual production				
	1978	1979	1980	1981	1982	1978	1979	1980	1981	1982	1978	1979	1980	1981	1982	1978	1979	1980	1981	1982
Eastern Upper Peninsula	85	119	70	56	77	25	21	34	24	33	1	1	3	3	3	73	83	124	119	97
Western Upper Peninsula	50	48	53	45	52	18	17	23	19	34	1	1	3	3	7	134	174	163	143	135
Northern Lower Peninsula	122	166	124	118	118	(2/)	1	1	2	1	--	--	--	--	--	179	194	206	194	128
Southern Lower Peninsula	20	17	21	18	15	--	--	--	--	--	--	--	--	--	--	3	5	8	17	36
Total	277	350	268	237	262	43	39	58	45	68	2	2	6	6	10	389	456	501	473	396

MINNESOTA

Aspen-Birch	89	75	66	71	92	126	119	127	93	98	18	18	22	11	24	17	18	30	31	27
Northern Pine	89	75	76	70	80	38	34	43	34	36	10	16	18	18	20	9	9	16	19	28
Central Hardwood	8	8	9	6	7	(2/)	(2/)	(2/)	(2/)	--	--	(2/)	(2/)	(2/)	(2/)	13	4	2	3	4
Prairie	--	--	--	(2/)	(2/)	(2/)	--	(2/)	(2/)	--	2	2	3	1	(2/)	--	--	(2/)	--	--
Total	186	158	151	147	179	164	153	170	127	134	30	36	43	30	44	39	31	48	53	59

WISCONSIN

Northeastern	98	95	95	111	156	16	14	27	22	23	2	1	2	1	2	113	150	181	154	134
Northwestern	122	113	113	131	141	3	4	5	5	5	1	1	1	3	4	159	165	186	160	152
Central	121	127	149	150	166	(2/)	(2/)	1	(2/)	(2/)	(2/)	(2/)	(2/)	1	1	91	121	82	70	53
Southwestern	11	20	22	20	23	--	--	(2/)	(2/)	(2/)	--	--	--	--	(2/)	8	4	4	3	(2/)
Southeastern	5	6	8	7	8	--	1	(2/)	--	--	--	--	--	--	--	2	1	2	2	1
Total	357	361	387	419	494	19	19	33	27	28	3	2	3	5	7	373	441	455	389	340
Lake States	820	869	806	803	935	226	211	261	199	230	35	40	52	41	61	801	928	1,004	915	795

(Table 8 continued on next page)

(Table 8 continued)

Unit	All species[3/] Annual production				
	1978	1979	1980	1981	1982
MICHIGAN					
Eastern Upper Peninsula	387	457	469	414	425
Western Upper Peninsula	537	561	566	517	554
Northern Lower Peninsula	575	759	745	693	585
Southern Lower Peninsula	29	27	35	48	66
Total	1,528	1,804	1,815	1,672	1,630
MINNESOTA					
Aspen-Birch	674	696	642	635	618
Northern Pine	494	585	552	597	708
Central Hardwood	58	56	40	36	65
Prairie	2	3	3	2	(2/)
Total	1,228	1,340	1,237	1,270	1,391
WISCONSIN					
Northeastern	706	786	947	880	875
Northwestern	678	701	752	870	832
Central	260	327	335	315	303
Southwestern	20	25	27	24	23
Southeastern	7	10	12	9	10
Total	1,671	1,849	2,073	2,098	2,043
Lake States	4,427	4,993	5,125	5,040	5,064

Table 9.--Lake States pulpwood production from roundwood by county and species group, 1982

(In standard cords, unpeeled)

MICHIGAN

Unit and County[1/]	All species	Species group										
		Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar
E. Upper Peninsula												
Alger	29,847	363	2,740	3,499	2,234	3,112	725	1,447	145	250	2,009	800
Chippewa	39,910	370	3,782	2,545	15,703	615	740	2,945	319	206	5,606	745
Delta	110,272	1,753	17,322	4,545	5,640	12,567	2,867	8,783	1,102	510	24,425	5,348
Luce	25,147	138	3,402	6,317	5,267	115	311	3,605	193	51	2,585	262
Mackinac	34,499	356	4,380	1,838	801	210	420	3,365	84	772	8,775	1,179
Menominee	127,201	1,354	18,510	6,250	795	1,774	3,011	8,990	753	2,209	40,619	6,881
Schoolcraft	58,591	958	6,139	4,372	14,301	4,305	1,365	4,699	290	226	9,185	1,447
Total	425,467	5,292	56,275	29,366	44,741	22,698	9,439	33,834	2,886	4,224	93,204	16,662
W. Upper Peninsula												
Baraga	53,449	881	3,647	5,122	1,518	253	1,026	2,099	252	574	15,313	--
Dickinson	69,234	431	5,841	1,060	574	1,015	705	3,291	532	198	46,239	1,351
Gogebic	29,692	--	329	2,498	45	2,217	66	573	--	757	8,478	--
Houghton	14,495	--	913	598	317	63	--	563	3,415	120	2,977	--
Iron	131,906	630	11,569	2,976	4,509	2,898	1,655	12,262	1,307	984	44,412	2,603
Keweenaw	337	--	--	92	--	217	--	28	--	--	--	--
Marquette	164,295	4,470	21,724	11,945	23,190	5,121	5,888	14,303	1,342	609	30,290	5,826
Ontonagon	90,065	--	596	1,892	45	331	311	630	74	955	62,920	--
Total	553,473	6,412	44,619	26,183	30,198	12,115	9,651	33,749	6,922	4,197	210,629	9,780
N. Lower Peninsula												
Alcona	44,711	--	--	--	867	799	--	--	--	544	30,979	1,509
Alpena	17,087	--	84	--	347	312	--	19	--	393	11,991	614
Antrim	3,777	--	--	--	315	501	--	--	--	78	2,157	17
Arenac	567	--	--	--	300	--	--	--	--	--	102	--
Benzie	8,342	--	--	--	--	358	--	--	--	42	5,651	--
Charlevoix	6,554	--	--	--	154	--	--	--	--	25	4,779	5
Cheboygan	60,693	--	1,119	--	3,102	--	--	147	--	1,012	38,937	1,029
Clare	17,186	--	--	--	246	--	--	--	--	110	12,119	--
Crawford	25,192	--	38	--	11,904	144	--	2	--	15	9,603	44
Emmet	11,005	--	--	--	493	1,057	--	--	--	74	7,534	12
Gladwin	3,477	--	--	--	--	23	--	--	--	14	3,165	--
Grand Traverse	2,642	--	--	--	723	723	--	--	--	--	1,131	--
Iosco	11,034	--	--	--	4,641	1,929	--	--	--	85	2,397	126
Isabella	4,796	--	--	--	--	2,801	--	--	--	--	1,995	--
Kalkaska	6,033	--	--	--	1,729	1,581	--	--	--	19	2,075	--
Lake	32,680	--	--	--	6,765	6,765	--	--	--	68	5,618	--
Leelanau	1,927	--	--	--	--	46	--	--	--	10	1,404	--
Manistee	9,421	--	--	--	237	237	--	--	--	312	3,023	--
Mason	19,185	--	--	--	--	1,411	--	--	--	107	10,551	--
Mecosta	21,083	--	--	--	--	2,414	--	--	--	28	15,939	--
Midland	1,181	--	--	--	--	68	--	--	--	--	946	--
Missaukee	21,350	--	--	--	--	313	--	--	--	110	17,543	5
Montmorency	45,313	--	16	--	4,597	187	--	2	--	574	29,642	628
Newaygo	37,854	--	--	--	7,069	7,069	--	--	--	134	13,224	--
Oceana	21,870	--	--	--	--	3,064	--	--	--	134	8,940	--
Ogemaw	24,364	--	--	--	5,035	4,850	--	--	--	108	7,732	189
Osceola	7,059	--	--	--	--	437	--	--	--	--	5,964	--
Oscoda	36,409	--	--	10	8,935	4,548	--	--	--	178	18,375	550
Otsego	8,201	--	--	--	2,832	1,819	--	--	--	32	2,397	39
Presque Isle	33,654	--	2,631	--	3,034	--	--	605	--	691	17,782	743
Roscommon	19,100	--	--	--	2,314	47	--	--	--	203	13,506	70
Wexford	21,118	--	--	--	4,564	4,564	--	--	--	52	7,264	--
Total	584,865	--	3,888	10	70,203	48,067	--	775	--	5,152	314,465	5,580
S. Lower Peninsula												
Allegan	25,065	--	--	--	--	497	--	--	--	263	4,370	--
Barry	3,987	--	--	--	--	801	--	--	--	27	895	--
Berrien	22	--	--	--	--	22	--	--	--	--	--	--
Calhoun	162	--	--	--	--	162	--	--	--	--	--	--
Clinton	147	--	--	--	--	57	--	--	--	--	90	--
Eaton	19	--	--	--	--	19	--	--	--	--	--	--
Ingham	40	--	--	--	--	20	--	--	--	--	20	--
Ionia	1,145	--	--	--	--	--	--	--	--	399	347	--
Kalamazoo	2,010	--	--	--	--	283	--	--	--	18	373	--
Kent	254	--	--	--	--	2	--	--	--	--	252	--
Montcalm	4,455	--	--	--	--	1,615	--	--	--	3	2,648	--
Muskegon	10,690	--	--	--	--	4,011	--	--	--	49	2,452	--
Ottawa	9,176	--	--	--	--	7,026	--	--	--	16	1,088	--
St. Joseph	955	--	--	--	--	--	--	--	--	10	163	--
Shiawassee	111	--	--	--	--	111	--	--	--	--	--	--
Tuscola	12	--	--	--	--	12	--	--	--	--	--	--
Van Buren	7,763	--	--	--	--	154	--	--	--	82	1,301	--
Washtenaw	418	--	--	--	--	418	--	--	--	--	--	--
Total	66,431	--	--	--	--	15,210	--	--	--	867	13,999	--
State total	1,630,236	11,704	104,782	55,559	145,142	98,090	19,090	68,358	9,808	14,440	632,297	32,022

(Table 9 continued on next page)

(Table 9 continued)

MICHIGAN

Unit and County[1/]	Species group											
	Basswood	Beech	White birch	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Other hardwoods
E. Upper Peninsula												
Alger	400	1,091	1,109	794	--	4,537	--	2,628	1,607	112	15	230
Chippewa	372	633	1,141	621	--	552	--	1,386	1,498	62	--	69
Delta	1,956	2,062	6,365	2,682	--	2,162	--	4,757	5,041	18	5	362
Luce	131	265	353	244	--	678	--	558	626	22	--	24
Mackinac	589	1,446	1,733	982	--	873	--	3,676	2,813	98	--	109
Menominee	1,775	1,915	8,637	2,700	--	6,782	--	8,110	4,767	917	27	425
Schoolcraft	723	971	2,010	1,273	--	1,448	--	2,121	2,459	110	29	160
Total	5,946	8,383	21,348	9,296	--	17,032	--	23,236	18,811	1,339	76	1,379
W. Upper Peninsula												
Baraga	1,108	--	1,562	2,288	--	6,593	--	7,755	2,839	131	24	464
Dickinson	568	--	3,536	329	--	777	--	1,244	1,330	110	7	96
Gogebic	10	--	200	2,022	--	6,205	--	4,225	1,507	342	17	201
Houghton	64	--	711	537	--	1,823	--	1,548	680	28	--	138
Iron	1,245	--	6,043	3,982	--	14,910	--	11,932	5,727	554	113	1,595
Keweenaw	--	--	--	--	--	--	--	--	--	--	--	--
Marquette	2,696	3,180	8,787	4,175	--	4,777	--	7,315	7,565	558	15	519
Ontonagon	2,143	--	1,618	2,311	--	3,750	--	10,362	1,974	38	2	113
Total	7,834	3,180	22,457	15,644	--	38,835	--	44,381	21,622	1,761	178	3,126
N. Lower Peninsula												
Alcona	101	82	2,119	--	--	--	--	227	3,259	3,754	471	--
Alpena	47	75	951	--	--	--	--	207	1,829	192	26	--
Antrim	101	77	115	22	--	--	--	123	52	193	--	26
Arenac	--	--	18	--	--	--	--	--	147	--	--	--
Benzie	44	71	151	--	--	--	--	127	1,372	330	123	73
Charlevoix	18	14	273	10	--	--	--	128	683	457	7	1
Cheboygan	630	466	4,206	82	--	--	--	243	6,729	2,926	54	11
Clare	214	213	526	5	--	--	--	213	2,168	934	334	104
Crawford	39	88	598	--	--	--	--	--	1,233	995	461	28
Emmet	10	45	82	5	--	--	--	417	1,203	59	--	14
Gladwin	21	--	140	--	--	--	--	--	104	10	--	--
Grand Traverse	--	--	12	--	--	--	--	--	53	--	--	--
Iosco	17	12	322	--	--	--	--	35	547	815	108	--
Isabella	--	--	--	--	--	--	--	--	--	--	--	--
Kalkaska	39	14	113	20	--	--	--	--	268	140	9	26
Lake	69	66	87	14	--	--	--	137	1,392	9,082	2,544	73
Leelanau	--	21	52	--	--	--	--	52	--	321	--	21
Manistee	104	454	202	--	--	--	--	320	3,796	312	312	112
Mason	--	197	157	--	--	--	--	108	3,083	3,269	229	73
Mecosta	--	--	111	--	--	--	--	88	442	1,693	368	--
Midland	--	--	84	--	--	--	--	--	83	--	--	--
Missaukee	221	86	447	9	--	--	--	461	1,584	393	81	97
Montmorency	224	153	2,347	--	--	--	--	158	4,283	2,295	170	37
Newaygo	62	52	187	52	--	--	--	152	1,403	5,940	2,465	45
Oceana	87	24	160	24	--	--	--	166	1,575	6,025	1,671	--
Ogemaw	122	18	651	--	--	--	--	102	2,575	2,625	357	--
Osceola	--	--	205	--	--	--	--	37	364	52	--	--
Oscoda	259	24	1,042	2	--	--	--	34	1,321	945	162	24
Otsego	53	36	202	8	--	--	--	7	464	300	2	10
Presque Isle	135	100	2,955	--	--	--	--	275	3,760	837	106	--
Roscommon	62	56	631	6	--	--	--	52	1,663	266	184	40
Wexford	52	52	95	--	--	--	--	186	3,124	1,040	73	52
Total	2,731	2,496	19,241	259	--	--	--	4,055	50,559	46,200	10,317	867
S. Lower Peninsula												
Allegan	277	231	249	231	257	257	231	231	3,855	8,327	5,789	--
Barry	29	24	26	24	27	27	24	24	404	961	694	--
Berrien	--	--	--	--	--	--	--	--	--	--	--	--
Calhoun	--	--	--	--	--	--	--	--	--	--	--	--
Clinton	--	--	--	--	--	--	--	--	--	--	--	--
Eaton	--	--	--	--	--	--	--	--	--	--	--	--
Ingham	--	--	--	--	--	--	--	--	--	--	--	--
Ionia	--	--	--	--	--	--	--	--	399	--	--	--
Kalamazoo	19	16	17	16	17	17	16	16	258	557	387	--
Kent	--	--	--	--	--	--	--	--	--	--	--	--
Montcalm	--	--	3	--	--	--	--	4	19	134	29	--
Muskegon	5	4	49	4	--	--	--	64	486	2,590	976	--
Ottawa	--	--	16	--	--	--	--	21	106	744	159	--
St. Joseph	11	9	10	9	10	10	9	9	151	327	227	--
Shiawassee	--	--	--	--	--	--	--	--	--	--	--	--
Tuscola	--	--	--	--	--	--	--	--	--	--	--	--
Van Buren	87	72	78	72	80	80	72	72	1,204	2,602	1,807	--
Washtenaw	--	--	--	--	--	--	--	--	--	--	--	--
Total	428	356	448	356	391	391	352	441	6,882	16,242	10,068	--
State total	16,939	14,415	63,494	25,555	391	56,258	352	72,113	97,874	65,542	20,639	5,372

(Table 9 continued on next page)

(Table 9 continued)

MINNESOTA

Unit and County[1/]	All species	Species group: Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar
Aspen-Birch												
Carlton	15,971	--	158	--	674	466	121	1,095	90	--	12,153	1,214
Cook	42,450	--	9,537	--	8,385	33	54	14,595	--	--	9,846	--
Koochiching	196,458	--	26,042	--	13,684	2,333	1,074	48,691	16,764	62	80,192	6,798
Lake	57,967	--	7,063	--	3,005	1,650	2,783	13,302	2,045	--	27,102	656
St. Louis	305,393	--	24,535	--	41,557	9,213	7,347	20,237	5,097	3,120	178,672	15,040
Total	618,239	--	67,335	--	67,305	13,695	11,379	97,920	23,996	3,182	307,965	23,708
Northern Pine												
Aitkin	40,372	--	380	--	355	251	60	242	863	--	33,973	4,248
Becker	11,224	--	--	--	2,752	269	83	--	27	--	7,329	764
Beltrami	111,191	--	5,595	--	7,336	1,520	214	8,863	10,279	42	69,587	6,902
Cass	103,876	--	2,572	--	15,849	2,320	291	569	199	32	79,444	1,556
Clearwater	38,116	--	1,519	--	1,671	543	83	2,044	456	42	29,426	2,107
Crow Wing	18,042	--	--	--	6,426	695	--	--	--	--	10,921	--
Hubbard	78,060	--	183	--	4,691	849	264	304	180	--	67,382	4,139
Itasca	254,148	--	27,584	--	10,040	1,723	609	9,452	2,570	--	194,597	7,389
Lake of the Woods	28,356	--	641	--	9,249	223	42	9,795	4,323	--	3,777	306
Mahnomen	6,857	--	--	--	223	42	14	--	1,309	--	4,960	309
Roseau	5,901	--	--	--	1,233	83	28	4,054	27	--	427	49
Wadena	11,946	--	--	--	8,271	1,139	181	--	14	--	2,296	45
Total	708,089	--	38,474	--	68,096	9,657	1,869	35,323	20,247	116	504,119	27,814
Central Hardwood												
Goodhue	102	--	--	--	33	69	--	--	--	--	--	--
Isanti	167	--	12	--	42	106	7	--	--	--	--	--
Kanabec	3,902	--	--	--	--	--	--	--	--	--	3,902	--
Mille Lacs	28,914	--	--	--	209	23	--	--	24	36	28,324	--
Morrison	9,201	--	--	--	209	23	--	--	111	--	8,858	--
Otter Tail	380	--	--	--	--	--	--	--	--	--	380	--
Pine	18,694	--	--	--	1,754	1,167	316	--	--	--	12,018	3,439
Sherburne	2,638	--	--	--	79	2,546	13	--	--	--	--	--
Todd	612	--	--	--	209	23	--	--	--	--	380	--
Winona	16	--	--	--	16	--	--	--	--	--	--	--
Total	64,626	--	12	--	2,551	3,957	336	--	135	36	53,862	3,439
Prairie												
Cottonwood	14	--	--	--	14	--	--	--	--	--	--	--
Polk	206	--	--	--	--	--	--	--	206	--	--	--
Red Lake	53	--	--	--	26	27	--	--	--	--	--	--
Sibley	12	--	--	--	--	12	--	--	--	--	--	--
Total	285	--	--	--	40	39	--	--	206	--	--	--
State total	1,391,239	--	105,821	--	137,992	27,348	13,584	133,243	44,584	3,334	865,946	54,961

Unit and County[1/]	Species group: Basswood	Beech	White birch	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Other hardwoods
Aspen-Birch												
Carlton	--	--	--	--	--	--	--	--	--	--	--	--
Cook	--	--	--	--	--	--	--	--	--	--	--	--
Koochiching	--	--	506	--	--	--	--	312	--	--	--	--
Lake	--	--	361	--	--	--	--	--	--	--	--	--
St. Louis	--	--	513	--	--	--	--	62	--	--	--	--
Total	--	--	1,380	--	--	--	--	374	--	--	--	--
Northern Pine												
Aitkin	--	--	--	--	--	--	--	--	--	--	--	--
Becker	--	--	--	--	--	--	--	--	--	--	--	--
Beltrami	42	--	686	--	--	--	--	125	--	--	--	--
Cass	--	--	1,000	--	--	24	--	9	11	--	--	--
Clearwater	10	--	153	--	--	--	--	62	--	--	--	--
Crow Wing	--	--	--	--	--	--	--	--	--	--	--	--
Hubbard	16	--	52	--	--	--	--	--	--	--	--	--
Itasca	79	--	80	--	--	--	--	25	--	--	--	--
Lake of the Woods	--	--	--	--	--	--	--	--	--	--	--	--
Mahnomen	--	--	--	--	--	--	--	--	--	--	--	--
Roseau	--	--	--	--	--	--	--	--	--	--	--	--
Wadena	--	--	--	--	--	--	--	--	--	--	--	--
Total	147	--	1,971	--	--	24	--	221	11	--	--	--
Central Hardwood												
Goodhue	--	--	--	--	--	--	--	--	--	--	--	--
Isanti	--	--	--	--	--	--	--	--	--	--	--	--
Kanabec	--	--	--	--	--	--	--	--	--	--	--	--
Mille Lacs	--	--	53	--	--	67	--	26	16	87	49	--
Morrison	--	--	--	--	--	--	--	--	--	--	--	--
Otter Tail	--	--	--	--	--	--	--	--	--	--	--	--
Pine	--	--	--	--	--	--	--	--	--	--	--	--
Sherburne	--	--	--	--	--	--	--	--	--	--	--	--
Todd	--	--	--	--	--	--	--	--	--	--	--	--
Winona	--	--	--	--	--	--	--	--	--	--	--	--
Total	--	--	53	--	--	67	--	26	16	87	49	--
Prairie												
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--
Polk	--	--	--	--	--	--	--	--	--	--	--	--
Red Lake	--	--	--	--	--	--	--	--	--	--	--	--
Sibley	--	--	--	--	--	--	--	--	--	--	--	--
Total	--	--	--	--	--	--	--	--	--	--	--	--
State total	147	--	3,404	--	--	91	--	621	27	87	49	--

(Table 9 continued on next page)

(Table 9 continued)

WISCONSIN

Unit and County[1/]	All species	Species group										
		Cedar	Balsam fir	Hemlock	Jack pine	Red pine	White pine	Spruce	Tamarack	Ash	Aspen	Balsam poplar
Northeastern												
Florence	61,422	--	4,615	1,996	3,222	2,942	412	1,405	81	442	35,237	--
Forest	116,066	--	17,950	1,446	2,244	8,471	143	7,252	262	1,442	42,377	--
Langlade	80,468	--	6,150	524	583	2,571	--	1,193	461	1,612	40,165	--
Lincoln	93,838	--	3,239	611	1,373	3,206	642	1,023	1,057	2,576	59,348	--
Marinette	142,872	--	11,978	3,292	23,638	11,883	725	4,190	80	923	71,197	--
Menominee	48,109	--	75	17,616	3,569	958	2,311	25	--	401	16,350	--
Oconto	64,561	--	900	630	9,960	10,485	749	144	--	426	35,801	--
Oneida	131,195	--	15,718	753	10,322	11,762	1,235	4,971	427	1,988	48,308	--
Shawano	23,531	--	25	1,336	831	6,096	277	--	26	247	8,804	--
Vilas	112,930	--	9,478	1,047	17,932	15,527	1,705	2,517	30	799	34,931	--
Total	874,992	--	70,128	29,251	73,674	73,901	8,199	22,720	2,424	10,856	392,518	--
Northwestern												
Ashland	89,033	--	12,267	505	1,958	3,643	516	2,590	1,029	1,739	37,482	--
Barron	3,425	--	14	--	747	1,159	12	--	--	8	1,121	--
Bayfield	139,668	--	2,589	105	17,403	6,810	1,281	167	57	519	90,746	809
Burnett	50,183	--	--	--	19,205	3,150	70	88	23	4	27,146	--
Douglas	92,418	--	1,242	--	40,788	8,515	252	53	36	238	36,731	405
Iron	68,943	--	1,435	883	319	1,075	613	314	92	1,852	42,962	--
Polk	2,194	--	--	55	2,106	26	--	--	--	--	--	--
Price	111,780	--	7,015	785	1,105	4,950	201	1,339	1,725	6,850	34,853	--
Rusk	60,194	--	56	494	7	1,512	22	--	--	4,111	29,350	--
Sawyer	97,395	--	4,754	412	507	1,259	11	463	51	2,295	62,092	--
Taylor	58,859	--	2,296	404	14	2,036	--	212	696	2,616	24,376	--
Washburn	57,474	--	638	--	10,368	9,043	187	81	10	380	33,008	--
Total	831,566	--	32,306	3,643	94,527	43,178	3,165	5,307	3,719	20,612	419,867	1,214
Central												
Adams	49,375	--	--	--	14,779	25,915	1,521	--	23	42	545	--
Chippewa	21,548	--	11	12	1,576	1,258	--	14	--	728	9,766	--
Clark	35,738	--	24	35	2,385	3,472	16	--	--	597	15,884	--
Eau Claire	13,415	--	--	--	6,552	3,081	222	--	--	93	1,716	--
Jackson	29,558	--	--	--	15,302	6,398	305	--	--	246	2,625	--
Juneau	33,777	--	--	--	18,417	5,068	1,293	--	--	80	2,239	--
Marathon	33,371	--	545	263	1,490	3,366	249	33	--	540	18,715	--
Marquette	7,603	--	--	--	1,158	3,932	61	--	--	--	590	--
Monroe	12,093	--	--	--	7,751	2,479	75	--	--	84	324	--
Portage	17,904	--	71	87	3,133	5,078	1,063	--	873	88	4,486	--
Waupaca	13,248	--	--	86	1,177	3,998	583	22	--	121	5,375	--
Waushara	16,091	--	--	--	2,113	12,912	1,009	--	--	--	--	--
Wood	19,074	--	--	--	3,198	2,360	1,341	55	26	310	8,307	--
Total	302,795	--	651	483	79,031	79,317	7,738	124	922	2,929	70,572	--
Southwestern												
Buffalo	746	--	--	--	11	644	34	--	--	--	57	--
Crawford	1	--	--	--	--	--	--	--	--	--	1	--
Dunn	11,442	--	--	--	3,036	7,635	335	24	--	8	319	--
La Crosse	1,102	--	--	--	712	379	--	--	--	--	11	--
Pepin	508	--	--	--	97	299	44	28	10	--	30	--
Pierce	21	--	11	--	--	--	--	--	--	--	--	--
Richland	50	--	--	--	38	12	--	--	--	--	--	--
Sauk	3,609	--	--	--	542	2,729	171	--	--	2	--	--
Trempealeau	6,030	--	--	--	150	5,537	235	108	--	--	--	--
Vernon	11	--	--	--	--	11	--	--	--	--	--	--
Total	23,520	--	11	--	4,586	17,246	819	160	10	10	418	--
Southeastern												
Brown	1,247	--	--	--	335	441	--	--	--	--	471	--
Columbia	6,503	--	--	--	510	4,351	586	--	--	10	--	--
Dane	62	--	--	--	--	62	--	--	--	--	--	--
Door	63	--	--	--	--	--	--	--	--	--	63	--
Green	9	--	--	--	--	9	--	--	--	--	--	--
Green Lake	312	--	--	--	14	182	43	--	--	4	--	--
Jefferson	20	--	--	--	--	--	--	--	--	--	20	--
Kewaunee	11	--	--	--	--	--	--	--	--	--	--	--
Outagamie	663	--	--	--	8	219	99	--	--	3	291	--
Rock	25	--	--	--	--	25	--	--	--	--	--	--
Sheboygan	5	--	5	--	--	--	--	--	--	--	--	--
Walworth	716	--	--	--	22	528	166	--	--	--	--	--
Waukesha	561	--	--	--	--	530	31	--	--	--	--	--
Winnebago	27	--	--	--	--	27	--	--	--	--	--	--
Total	10,224	--	5	--	889	6,374	925	--	--	17	845	--
State total	2,043,097	--	103,101	33,377	252,707	220,016	20,846	28,311	7,075	34,424	884,220	1,214

(Table 9 continued on next page)

(Table 9 continued)

WISCONSIN

Unit and County[1/]	Species group											
	Basswood	Beech	White birch	Yellow birch	Cotton-wood	Elm	Hickory	Hard maple	Soft maple	Red oak	White oak	Other hardwoods
Northeastern												
Florence	14	--	3,178	878	--	1,694	--	3,543	1,104	513	111	35
Forest	1,257	1	9,912	1,418	--	6,256	--	10,343	4,045	543	149	555
Langlade	425	--	5,433	1,506	--	4,557	97	10,178	4,043	485	25	460
Lincoln	1,504	--	4,871	891	--	3,348	--	5,494	3,183	1,316	--	156
Marinette	51	1	4,513	169	--	1,679	--	3,401	2,684	1,931	452	85
Menominee	--	--	392	436	--	1,607	--	2,111	1,386	676	196	--
Oconto	15	--	1,627	56	--	1,029	--	1,098	990	490	125	36
Oneida	1,598	--	16,026	1,669	--	1,162	--	7,656	4,388	2,585	211	416
Shawano	1	--	396	253	--	2,229	268	1,247	758	585	94	58
Vilas	1,126	--	13,527	1,706	--	1,523	--	6,686	1,851	2,174	281	90
Total	5,991	2	59,875	8,982	--	25,084	365	51,757	24,432	11,298	1,644	1,891
Northwestern												
Ashland	68	--	8,186	2,057	--	4,305	--	8,019	3,934	617	3	115
Barron	1	--	309	--	--	5	--	3	6	25	15	--
Bayfield	4	--	11,099	386	--	469	--	1,405	855	4,963	1	--
Burnett	--	--	42	--	--	11	--	228	200	12	4	--
Douglas	--	--	3,665	24	--	38	--	251	167	11	1	1
Iron	745	--	5,202	1,505	--	1,459	--	6,751	2,957	597	--	182
Polk	--	--	--	--	--	--	--	4	3	--	--	--
Price	946	--	13,755	2,928	--	5,277	--	15,217	12,371	1,933	85	445
Rusk	1,598	--	5,572	751	--	2,638	52	5,500	3,847	3,845	573	266
Sawyer	1,190	--	10,123	1,210	--	1,087	--	7,619	2,670	1,304	160	188
Taylor	190	--	2,710	2,889	--	6,349	--	7,675	5,174	984	216	22
Washburn	--	--	1,925	18	--	86	--	747	588	291	81	23
Total	4,742	--	62,588	11,768	--	21,724	52	53,419	32,772	14,582	1,139	1,242
Central												
Adams	--	--	68	1	--	28	--	25	62	4,643	1,722	1
Chippewa	528	--	2,439	732	--	1,032	10	1,214	1,057	815	346	10
Clark	97	--	2,689	459	--	1,143	--	1,255	841	4,324	2,489	28
Eau Claire	4	--	194	29	--	151	--	136	242	799	179	17
Jackson	--	2	508	75	--	416	--	386	532	1,967	747	49
Juneau	--	--	377	5	--	165	--	144	233	4,086	1,666	4
Marathon	60	--	1,180	871	--	2,349	35	1,940	944	613	166	12
Marquette	--	--	156	--	--	156	--	208	156	770	416	--
Monroe	--	--	101	4	--	188	--	222	240	497	127	1
Portage	4	--	219	54	--	246	--	256	236	1,297	706	7
Waupaca	4	--	143	24	--	325	21	261	333	605	159	11
Waushara	--	--	--	--	--	--	--	--	--	57	--	--
Wood	--	--	308	66	--	228	--	250	254	1,740	626	5
Total	697	2	8,382	2,320	--	6,427	66	6,297	5,130	22,213	9,349	145
Southwestern												
Buffalo	--	--	--	--	--	--	--	--	--	--	--	--
Crawford	--	--	--	--	--	--	--	--	--	--	--	--
Dunn	--	--	10	--	--	32	--	19	19	--	--	5
La Crosse	--	--	--	--	--	--	--	--	--	--	--	--
Pepin	--	--	--	--	--	--	--	--	--	--	--	--
Pierce	--	--	--	--	--	--	--	--	--	10	--	--
Richland	--	--	--	--	--	--	--	--	--	--	--	--
Sauk	--	--	4	--	--	6	--	11	11	97	36	--
Trempealeau	--	--	--	--	--	--	--	--	--	--	--	--
Vernon	--	--	--	--	--	--	--	--	--	--	--	--
Total	--	--	14	--	--	38	--	30	30	107	36	5
Southeastern												
Brown	--	--	--	--	--	--	--	--	--	--	--	--
Columbia	--	2	56	1	--	37	--	111	47	482	304	6
Dane	--	--	--	--	--	--	--	--	--	--	--	--
Door	--	--	--	--	--	--	--	--	--	--	--	--
Green	--	--	--	--	--	--	--	--	--	--	--	--
Green Lake	--	--	7	--	--	11	--	18	18	11	4	--
Jefferson	--	--	--	--	--	--	--	--	--	--	--	--
Kewaunee	--	--	--	--	--	--	--	6	5	--	--	--
Outagamie	--	--	5	--	--	7	--	11	12	7	1	--
Rock	--	--	--	--	--	--	--	--	--	--	--	--
Sheboygan	--	--	--	--	--	--	--	--	--	--	--	--
Walworth	--	--	--	--	--	--	--	--	--	--	--	--
Waukesha	--	--	--	--	--	--	--	--	--	--	--	--
Winnebago	--	--	--	--	--	--	--	--	--	--	--	--
Total	--	2	68	1	--	55	--	146	82	500	309	6
State total	11,430	6	130,927	23,071	--	53,328	483	111,649	62,446	48,700	12,477	3,289

[1/] Includes only those counties that supplied pulpwood in 1982.

Table 10.--Central States pulpwood production by State and destination, 1978-1982.

(In thousand standard cords, unpeeled)

Year	Illinois			Indiana			Iowa			Missouri		
		Destination			Destination			Destination			Destination	
	Total	Central States	Other States	Total	Central States	Other States	Total	Central States	Other States	Total	Central States	Other States
1978	100	49	51	190	81	109	42	40	2	99	42	57
1979	102	52	50	204	89	115	69	56	13	101	42	59
1980	102	45	57	178	69	109	44	39	5	105	38	67
1981	100	43	57	185	68	117	32	26	6	111	44	67
1982	76	19	57	185	51	134	14	10	4	81	23	58

Table 11.--Trends in receipts of roundwood and residue as pulpwood, Central States, 1978-1982

(In thousand standard cords, unpeeled)

Type of material and Area	1978	1979	1980	1981	1982
Roundwood					
Illinois	30	33	19	19	--
Indiana, Iowa, Missouri	70	96	75	60	40
Total	100	129	94	79	40
Residue					
Illinois	54	59	28	3	--
Indiana, Iowa, Missouri	95	107	99	112	63
Total	149	166	127	115	63
All material	249	295	221	194	104

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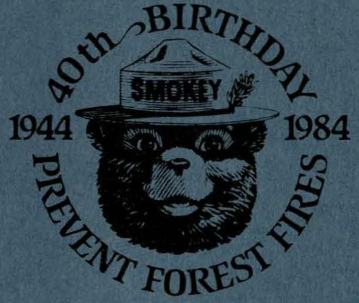
Pulpwood production in the north-central region, by county, 1982. Resour. Bull. NC-79. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station; 1984. 22 p.

Discusses 1982 production and receipts and recent production for other years in the Lake and Central States. Shows Michigan, Minnesota, and Wisconsin production by species for each county and compares production by Forest Survey Unit with that of previous years. Presents 1982 production and receipt data for Illinois, Indiana, Iowa, and Missouri, and shows four production classes by county.

KEY WORDS: Roundwood, residue, receipts, Lake States, Central States.


40th BIRTHDAY
SMOKEY
1944
1984
PREVENT FOREST FIRES